

Spiders of the Genus *Clubiona* from Taiwan (Araneae: Clubionidae)¹⁾

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小野展嗣²⁾: 台湾のフクログモ属 (クモ目: フクログモ科) のクモ類

Abstract Spider specimens of the genus *Clubiona* (Clubionidae) from Taiwan are taxonomically studied. They are identified into ten species including five species, *Clubiona yaginumai* HAYASHI, 1989, *C. kurosawai* ONO, 1986, *C. deletrix* O. PICKARD-CAMBRIDGE, 1885, *C. tanikawai* ONO, 1989, and *C. insulana* ONO, 1989, new to the Taiwanese fauna, and four new species to be described under the names *C. taiwanica*, *C. kuanshanensis*, *C. bonicula* and *C. kayashimai*. All the known species of the genus from Taiwan are listed.

Up to the present, only five species of the genus *Clubiona* were recorded from Taiwan (SHIMOJANA, 1967; YAGINUMA, 1977; CHU & OKUMA, 1976; ONO, 1992; HAYASHI & YOSHIDA, 1993; for other literature see CHU & OKUMA, 1976), that is, *Clubiona japonica* L. KOCH, 1878, *C. jucunda* (KARSCH, 1879), *C. japonicola* BÖSENBERG et STRAND, 1906, *C. asrevida* ONO, 1992, and *C. yangmingensis* HAYASHI et YOSHIDA, 1993. Accordingly, the knowledge of this subject was relatively poor and a comprehensive survey was expected.

Through the field research of the zoological expeditions to Taiwan made by the National Science Museum, Tokyo (1989–1991), many spider specimens were obtained from various parts of this country. A part of the results of taxonomical studies of the materials was already published (ONO, 1992 a, b; TANIKAWA & ONO, 1993; OKUMA, 1994). The present paper reports the result of a study based on about 50 specimens of spiders of the genus *Clubiona* collected in Taiwan during the expeditions. They were identified into ten species including *Clubiona asrevida* already described by the present author (ONO, 1992 b). Five species, *Clubiona yaginumai* HAYASHI, 1989, *C. kurosawai* ONO, 1986, *C. deletrix* O. PICKARD-CAMBRIDGE, 1885, *C. tanikawai* ONO, 1989, and *C. insulana* ONO, 1989, were newly recorded from Taiwan. *Clubiona deletrix* was known to be widely distributed in China and Japan, while the other four species were previously known only from Japan. Other than these, four species are recognized as new to science and described herein under the names *Clubiona taiwanica*, *C. kuanshanensis*, *C. bonicula* and *C. kayashimai*.

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All the type specimens of the new species are deposited in the collection of the National Science Museum, (Natural History), Tokyo.

The abbreviations used in the present paper are as follows: ALE, anterior lateral eye; AME, anterior median eye; PLE, posterior lateral eye; PME, posterior median eye.

Before going further, the author wishes to express his cordial thanks to Prof. Dr. Yau-I CHU and Dr. Chiun-chen KO, Taipei, for kind arrangement of the field research. Many thanks are also due to Dr. Takeo YAGINUMA and Prof. Yoshiaki NISHIKAWA, Osaka, and Mr. Hajime YOSHIDA, Yamagata, for helpful advice.

Family Clubionidae

Genus *Clubiona* sensu lato

Species-group of *Clubiona japonica*

Clubiona japonica L. KOCH, 1878

Clubiona japonica L. KOCH, 1878, p. 759, pl. XVI, figs. 21–22 (based on 1♂ from Japan, type depository?).—YAGINUMA, 1970, p. 673; 1977, p. 401.—CHU & OKUMA, 1976, p. 115. (Other literature see catalogues.)

Notes. No specimen of this species is included in the present materials. MIKHAILOV (1990) established the subgenus *Japoniona* based on *Clubiona japonica* as the type species. However, the present author treated the genus *Clubiona* in widest sense because of lack of knowledge of the spiders in the subtropical and tropical regions.

Distribution. Taiwan; China, Japan, Korea, Russia (Siberia).

Species-group of *Clubiona corticalis*

Clubiona yaginumai HAYASHI, 1989

(Figs. 1–2)

Clubiona yaginumai HAYASHI, 1989, p. 103, figs. 1–6 (holotype ♂, allotype ♀ and 4♀5♂ paratypes from Kannon-yama, 100 m alt., Takasaki-shi, Gunma Pref., Japan, 24–VI–1984, T. HAYASHI leg., 1♂ paratype from Ichiyama, Amagi-yugashima-chô, Shizuoka Pref., Japan, 18–VI–1984, K. KUMADA leg.; the holotype and paratype in the collection of the Arachnological Society of Japan, examined).

Specimens examined. 1♀1♂, Jihyueh-t'an, Tehua-she, 850 m alt., Nant'ou Hsien, Taiwan, 3–III–1991, H. ONO leg. (NSMT–Ar 3137).

Notes. This species was recorded for the first time from Taiwan. The known distributional range indicates that this species may be widely distributed in eastern Asia and should be found in China and Korea in the future.

According to the original description by HAYASHI (1989), this species resembles *Clubiona corticalis* (WALCKENAER, 1802), representative of the species-group, distributed in Europe. The present author recognized both the species are closely related to each other. The differences between the two species, especially in genital morphology, were not clearly explained by HAYASHI. Therefore it may be neces-



Figs. 1–2. *Clubiona yaginumai* HAYASHI, 1989 (Jihyueh-t'an, Taiwan).—1, Male palp, ventral view; 2, same, retrolateral view. (Scale: 0.1 mm.)

sary to compare the Asian specimens with the European ones.

Body length of the Taiwanese specimen: 4.0 mm. Male palp is illustrated (Figs. 1–2).

Distribution. Taiwan, Japan.

***Clubiona kayashimai* sp. nov.**

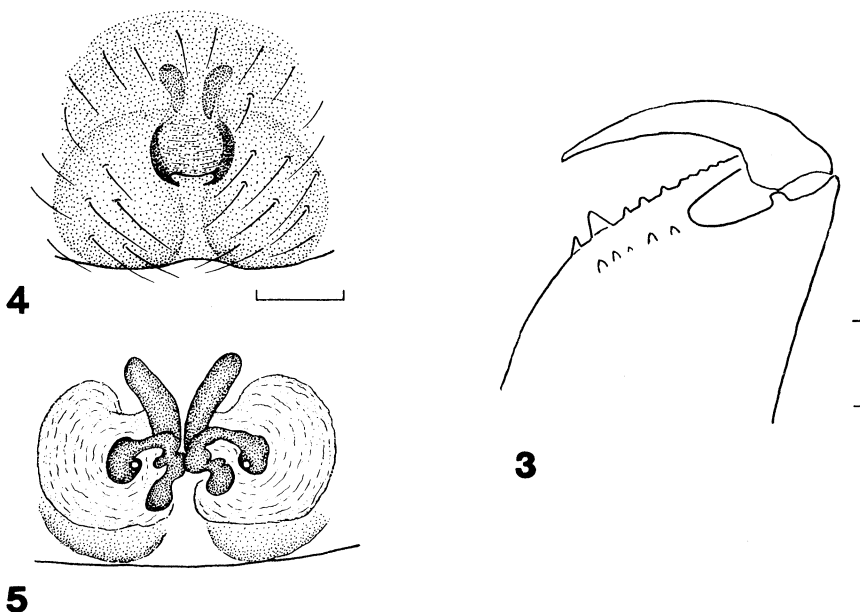
(Figs. 3–5)

Specimens examined. Holotype: ♀, Hungyeh-wench'uan, 240–300 m alt., Hualien Hsien, Taiwan, 20–III–1991, H. ONO leg. (NSMT–Ar 3138).

Description (based on the holotype ♀; ♂ unknown). Measurement (in mm). Body length 4.07; prosoma length 1.59, width 1.19; opisthosoma length 2.44, width 1.37; lengths of legs [total length (tarsus+metatarsus+tibia+patella+femur)]: I 3.44 (0.37+0.67+0.83+0.57+1.00), II 3.83 (0.39+0.75+0.95+0.57+1.17), III 3.18 (0.34+0.83+0.63+0.47+0.91), IV 4.68 (0.43+1.30+1.10+0.53+1.32).

Prosoma. Eyes: ALE, PME and PLE equal in size, AME smaller, AME/ALE 0.63, AME–AME/AME–ALE 1.25, PME–PME/PME–PLE 1.75, median ocular area wider than long (width/length 1.40), wider behind than in front (anterior width/posterior width 0.57). Chelicera normal, not very long, promargin of fang furrow with one large and four small teeth, retromargin with five small teeth (Fig. 3). Femora I–IV with 0–1–1–1 dorsal spines and 0–0–0–1 prolateral spines, respectively, femora III–IV with 0–0–0–1 retrolateral spines; tibiae I–II with 2–2–0 ventral spines; metatarsi I–II with 2–0–0 ventral spines.

Opisthosoma. Female genitalia (Figs. 4–5): Intromittent orifices small and



Figs. 3–5. *Clubiona kayashimai* sp. nov. (holotype).—3, Chelicera; 4, epigynum; 5, female genitalia, dorsal view. (Scales: 0.1 mm.)

situated in the middle of epigynum; intromittent canal very short; atrium a bladder organ, large and soft; spermathecae tubular with digitiform glands.

Coloration and markings. Carapace light yellowish brown, head darker; chelicerae, maxillae and labium light yellowish brown, sternum light yellow; legs light yellow, tarsi darker. Opisthosoma light yellow without marking.

Distribution. Taiwan (known only from the type locality).

Remarks. Having small spermathecae and large, bladder-like atria, *Clubiona kayashimai* seems to belong to the species-group of *C. corticalis*. However, the female genitalia of this new species are compactly set and the intromittent orifices are situated at the middle of epigynum. By these characteristics *Clubiona kayashimai* is unique in the species-group and no close relative has been known to science up to the present.

The species is named in honour of Dr. Izumi KAYASHIMA, Tokyo, for his efforts in study of Taiwanese spider.

Clubiona kurosawai ONO, 1986

Clubiona kurosawai ONO, 1986, p. 20, figs. 1–8 (holotype ♂, allotype ♀ and 1♀1♂ paratypes from Izuminosato, Karuizawa-machi, Kitasaku-gun, Nagano Pref., Japan, 1–VI–1976, K. & H. ONO leg., in National Science Museum (Nat. Hist.), Tokyo, examined).

Specimens examined. 1♀, Anma-shanchuang, 2,250 m alt., T'aichung Hsien, Taiwan, 1–III–1991; 2♀, same locality, 2–III–1991; 1♀, Mt. Hsiao-hsuehshan,

2,440 m alt., T'aichung Hsien, 19-X-1989; 3♀, Mt. Ch'uanhsing-shan, 1,590 m alt., T'aichung Hsien, 3♀, same, 1,700 m alt., 6♀, same, 1,840 m alt., 2♀, same, 2,100 m alt., all 2-III-1991; 2♀, T'at'achia, NW of Mt. Yu-shan, Nant'ou Hsien, 3-III-1991; 1♀, 6 km W of T'at'achia, Nant'ou Hsien, same date; 1♀, Kuanyun-shan-chuang, 2,410 m alt., Kuanyuan, Hualien Hsien, 13-III-1991; 2♀, Kuanyuan to Tayulin, NE of Mt. Hohuan-shan, Hualien Hsien, 15-III-1991; 1♂, Mt. T'engchih, 1,550 m alt., Paoshan-ts'un, T'aoyuan-hsing, Kaohsiung Hsien, 31-X-1989; all specimens collected by H. ONO (NSMT-Ar 3139-3152).

Notes. The spiders of this species were commonly found under stones and dead leaves in the mountainous regions of Taiwan. Many females collected in March had eggs in the sac-like retreats.

New record for Taiwan.

Distribution. Taiwan, Japan (Honshu).

Clubiona taiwanica sp. nov.

(Figs. 6-9)

Specimens examined. Type series: Holotype ♀, Shenmu, 2,180 m alt., Mt. Hohuan-shan, Nant'ou Hsien, Taiwan, 14-III-1991, H. ONO leg. (NSMT-Ar 3153); paratypes: 1♀, Alishan, 2,160 m alt., Chiai Hsien, 7-III-1991, H. ONO leg. (NSMT-Ar 3154), 1♀, T'at'achia, 2,480 m alt., NW of Mt. Yu-shan, Nant'ou Hsien, 4-III-1991, H. ONO leg. (NSMT-Ar 3155); 1♀, T'at'achia, 2,650 m alt., Mt. Yu-shan, Nant'ou Hsien, 5-III-1991, H. ONO leg. (NSMT-Ar 3156).

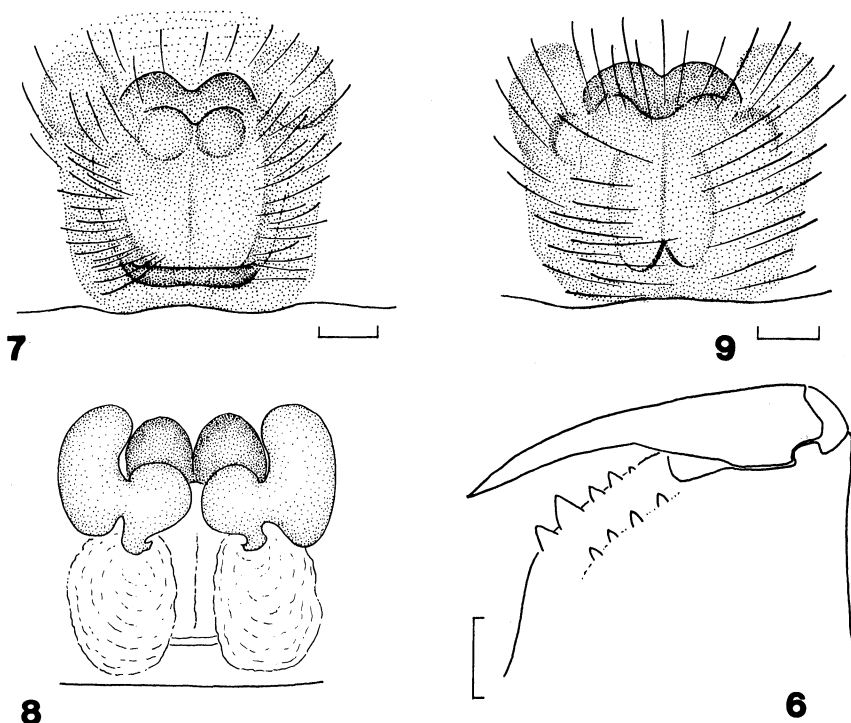
Description (based on the holotype ♀; ♂ unknown). Measurement (in mm). Body length 5.26; prosoma length 2.22, width 1.67; opisthosoma length 2.74, width 1.70; lengths of legs [total length (tarsus+metatarsus+tibia+patella+femur)]: I 4.52 (0.41+0.83+1.17+0.73+1.38), II 4.72 (0.41+0.85+1.20+0.78+1.48), III 4.46 (0.37+1.07+0.92+0.72+1.38), IV 6.36 (0.50+1.77+1.45+0.77+1.87).

Prosoma. Eyes almost equal in size, AME smaller and ALE larger (AME/ALE 0.67, PME/PLE 1.00), AME-AME/AME-ALE 1.18, PME-PME/PME-PLE 1.42, median ocular area length/width 0.67, anterior width/posterior width 0.64, clypeus/AME-AME 0.62. Chelicera: promargin of fang furrow with five teeth, retromargin with four teeth (Fig. 6). Femora I-IV with 1-0-1-1 dorsal and 0-0-0-1 prolateral spines, III-IV with 0-0-0-1 retrolateral spines; tibiae I-II with 2-2-2-0 ventral spines; metatarsi I-II with 2-0 ventral spines.

Opisthosoma. Female genitalia (Figs. 7-8): Intromittent orifices situated in the anterior part of epigynum and covered by sclerotized plate, sclerotized guide pocket present in the posterior part, parallel to the epigastric furrow, the surface between intromittent orifices and guide pocket slightly concave. Intromittent canal wide and short, atrium a bladder organ, large and soft, spermathecae reniform, divided into two parts.

Coloration and markings. Carapace yellowish brown, chelicerae, maxillae, labium and legs I-II light yellowish brown, sternum and legs III-IV dark yellow. Opisthosoma white, without any marking.

Variation. Body length of the paratypes 4.89-5.11 mm. The epigynum of the paratype from Alishan (Fig. 9) shows different appearance from the holotype, but no significance is recognized in the internal structure.



Figs. 6–9. *Clubiona taiwanica* sp. nov. —6, Chelicera; 7, 9, epigyna; 8, female genitalia, dorsal view. 6–8, Holotype; 9, paratype from Alishan. (Scales: 0.1 mm.)

Distribution. Taiwan.

Remarks. The structure of female genitalia of the new species indicates that the spider is a member of the species-group of *Clubiona corticalis*. Of the known species of the group, *Clubiona ryukyuensis* ONO, 1989, described from Iriomotejima Island, the Ryukyu Islands, SW Japan, is related to this new species. A close resemblance is also considered between *Clubiona taiwanica* and another new species described in the present paper, *C. kuanshanensis*. These three species are separable in the structure of female genitalia, especially in the intromittent orifices, intromittent canals and spermathecae.

The specimens of this new species were collected from shrubs by the sweeping method.

***Clubiona kuanshanensis* sp. nov.**

(Figs. 10–12)

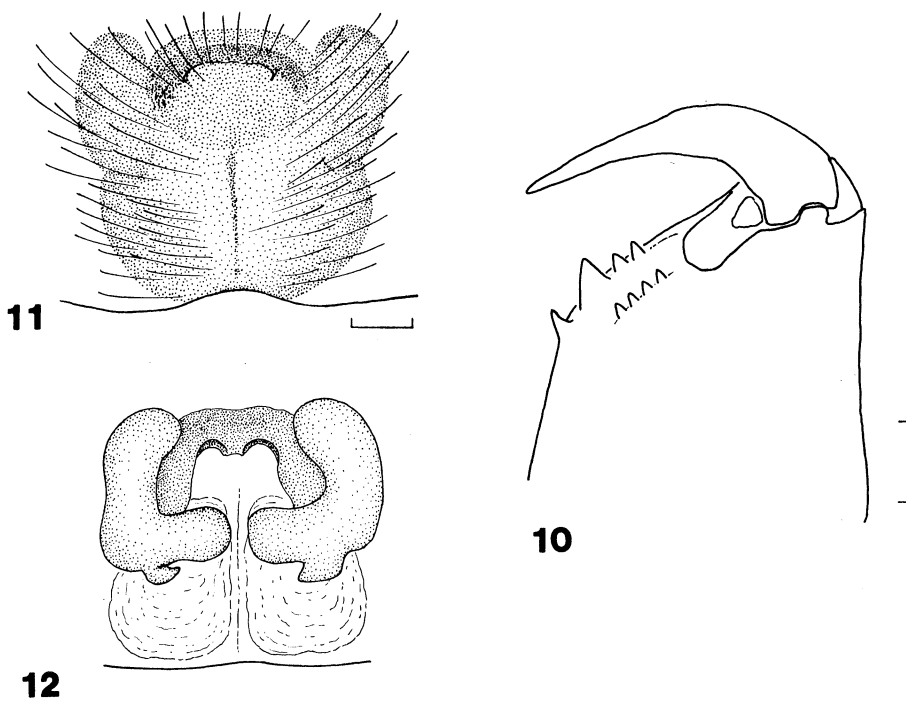
Specimens examined. Type series: Holotype ♀, Kuanshan-yak'ou, 2,320 m alt., NE of Mt. Kuanshan, Taitung Hsien, Taiwan, 10–III–1991, H. ONO leg. (NSMT–Ar 3157); paratype: 1♀, Mt. T'akuan-shan, 2,570 m alt., near the type

locality, 9-III-1991, H. ONO leg. (NSMT-Ar 3158).

Description (based on the ♀ holotype; ♂ unknown). Measurement (in mm). Body length 5.04; prosoma length 2.19, width 1.56; opisthosoma length 2.85, width 1.93; lengths of legs [total length (tarsus+metatarsus+tibia+patella+femur)]: I 4.27 (0.42+0.78+1.10+0.70+1.27), II 4.50 (0.43+0.83+1.10+0.77+1.37), III 4.30 (0.43+1.03+0.90+0.67+1.27), IV 5.88 (0.50+1.62+1.33+0.70+1.73).

Prosoma. Eyes: AME/ALE 0.63, PME/PLE 0.88, AME-AME/AME-ALE 1.20, PME-PME/PME-PLE 1.42, median ocular area length/width 0.67, anterior width/posterior width 0.60, clypeus/AME-AME 0.67. Chelicera: Promargin of fang furrow with four teeth (the second one large), retromargin with four teeth relatively small and closely standing to one another (Fig. 10). Femora I-IV with 1-0-1-1 dorsal and 0-0-0-1 prolateral spines, III-IV 0-0-0-1 retrolateral spines; tibiae I-II with three pairs (2-2-2-0) of ventral spines; metatarsi I-II with a pair (2-0) of ventral spines.

Opisthosoma. Female genitalia (Figs. 11-12): Intromittent orifices situated in the anterior part of epigynum, the opening area sclerotized but not forming a plate, guide pocket absent in the posterior part of epigynum, the middle part of epigynum slightly expanded. Intromittent canals longer than those of *Clubiona taiwanica*, atrium a bladder organ, spermathecae tubular and not divided into two



Figs. 10-12. *Clubiona kuanshanensis* sp. nov. (holotype).—10, Chelicera; 11, epigynum; 12, female genitalia, dorsal view. (Scales: 0.1 mm.)

parts nor constricted at the middle.

Coloration and markings. Carapace dark yellow; chelicerae, maxillae and labium light yellowish brown, sternum light yellow, legs and palps dark yellow. Opisthosoma white and without any marking.

Variation. Another ♀ (paratype) is larger than the holotype (body length 5.40 mm).

Distribution. Taiwan.

Remarks. As was explained in the remarks of the former species, this new species resembles *Clubiona ryukyuensis* and *C. taiwanica* but is distinguishable from these species by the structure of female genitalia. The shape of spermathecae of *Clubiona kuanshanensis* is unique and characteristic.

The type specimens were obtained by the sifting method in the *Pinus* forest.

Clubiona bonicula sp. nov.

(Figs. 13–16)

Specimen examined. Holotype: ♂, Hsinjenkang, 2,380 m alt., SW of Mt. Hohuan-shan, Nant'ou Hsien, Taiwan, 15–III–1991, H. ONO leg. (NSMT–Ar 3159).

Description (based on the ♂ holotype; ♀ unknown). Measurement (in mm). Body length 4.44; prosoma length 2.22, width 1.55; opisthosoma length 2.26, width 1.41; lengths of legs [total length (tarsus+metatarsus+tibia+patella+femur)]: I 4.74 (0.43+0.93+1.28+0.72+1.38), II 4.92 (0.43+0.93+1.30+0.73+1.53), III 4.68 (0.42+1.20+0.98+0.70+1.38), IV 6.43 (0.53+1.82+1.43+0.75+1.90).

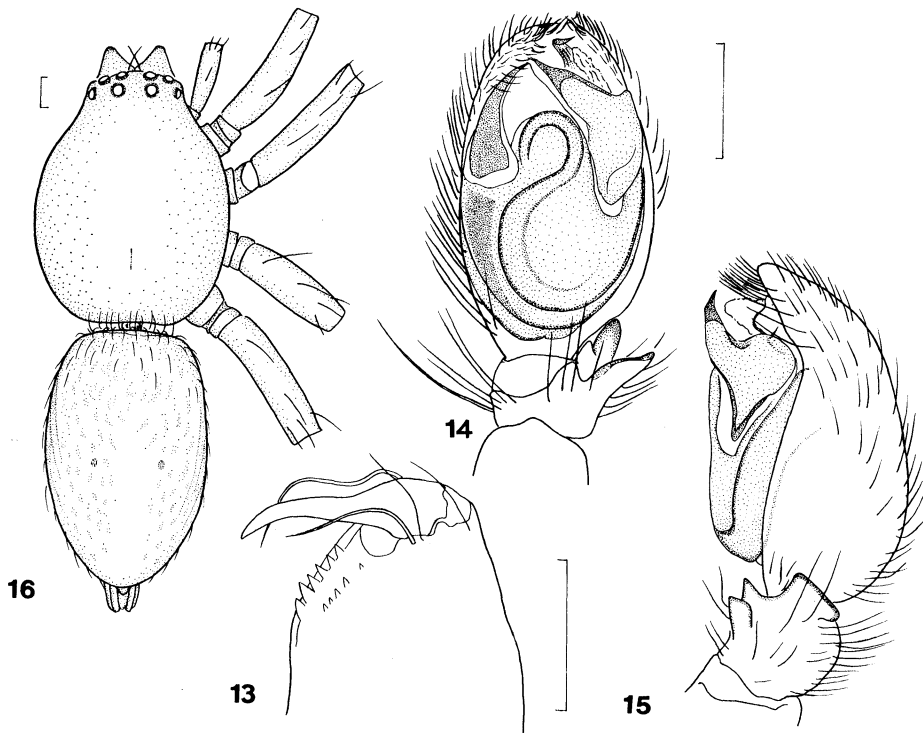
Prosoma. Eyes equal in size except for AME smaller than the others, AME/ALE 0.70, AME–AME/AME–ALE 1.43, PME–PME/PME–PLE 1.36, median ocular area length/width 0.67, anterior width/posterior width 0.65, clypeus/AME–AME 0.80. Chelicera normal, promargin of fang furrow with six teeth closely standing, retromargin with five small teeth (Fig. 13). Femora I–IV with 0–1–1–1 dorsal and 0–0–0–1 prolateral spines, III–IV with 0–0–0–1 retrolateral spines; tibiae I–II with three pairs (2–2–2–0) of ventral spines; metatarsi I–II with one pair (2–0) of ventral spines.

Male palp (Figs. 14–15). Tibia with weak setae; tibial apophysis divided into two parts; ventral one spatulate, retrolateral one low and wide, bifurcated. Tarsus ovate, with simple bulb; tegular apophysis developed and strongly sclerotized; embolus short and rostrated, with membranous conductor.

Coloration and markings (Fig. 16). Carapace dark yellow; chelicerae, maxillae and labium light yellowish brown, sternum yellow; tarsi, metatarsi and tibia of legs I–II light yellowish brown, the other parts of legs and palps dark yellow. Opisthosoma dark yellow with indistinct small spots in darker coloration.

Distribution. Taiwan (known only from the type locality).

Remarks. This new species is closely related to *Clubiona kasanensis* described from Korea by PAIK (1990), but can be distinguished from the latter by the shape of tibial apophyses of male palp. The retrolateral apophysis of *Clubiona bonicula* is wider and lower than that of the Korean species. The present author recorded *C. kasanensis* from Shikoku, Japan, and illustrated the male palp based on the Japanese specimen ONO (1992). Though he could not examine the specimen of the species from Korea, a small difference is recognized between the Japanese specimen and the



Figs. 13–16. *Clubiona bonicula* sp. nov. (holotype).—13, Chelicera; 14, Male palp, ventral view; 15, same, retrolateral view; 16, pro- and opisthosomata, dorsal view. (Scales: 0.25 mm.)

original illustration in the shape of the retrolateral apophysis of male palpal tibia. However, the Japanese spider was tentatively regarded to stand within the limits of variation.

The species name is made by an arbitrary arrangement of letters.

Species-group of *Clubiona jucunda*

Clubiona jucunda (KARSCH, 1879)

Liocranum jucundum KARSCH, 1879, p. 92 (type specimens from Japan in the museum in Berlin (?), not examined).

Clubiona jucunda: BÖSENBERG & STRAND, 1906, p. 279, pl. 7, fig. 88, pl. 16, fig. 495.—SHIMOJANA, 1967, p. 22.—YAGINUMA, 1970, p. 673; 1977, p. 401.—CHU & OKUMA, 1976, p. 115. (For other literature see catalogues.)

Notes. Though this species was not included in the present materials, the occurrence in Taiwan is confirmed through the wide distributional range.

Distribution. Taiwan; Japan, Korea, China.

Clubiona deletrix O. PICKARD-CAMBRIDGE, 1885

(Figs. 17–18)

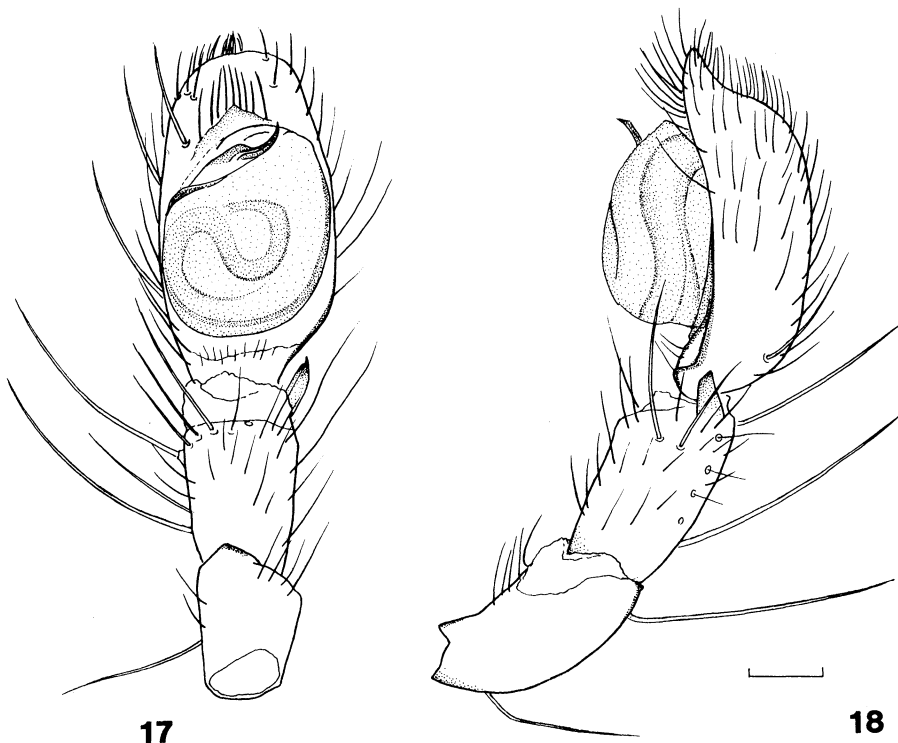
Clubiona deletrix O. PICKARD-CAMBRIDGE, 1885, p. 21, pl. II, fig. 14 (♀♂ type specimens from Xinjian, W China, STOLICZKA leg., in Hope Department of Zoology, Oxford (?), not examined).
 —SCHENKEL, 1936, p. 169. —ZHANG, 1991, p. 9, figs. 1–4.

Clubiona reichlini SCHENKEL, 1944, p. 203, fig. 14 (♂ holotype from Ningpo-fu, Tschekiang, China, G. REICHLIN leg., in Naturhistorisches Museum Basel, not examined). —Song, 1987, p. 326, fig. 281. —FENG, 1990, p. 172, fig. 147, pl. 68, fig. 147. —CHEN & ZHANG, 1991, p. 245, fig. 256, pl. VI, fig. 1. [Synonymized by ZHANG (1991).]

Clubiona maculata SONG et CHEN, 1979, p. 23, figs. 1–4 (holotype ♀, allotype ♂ and 10♀2♂ paratypes from Zhejiang, China, in Institute of Zoology, Chinese Academy of Sciences, Beijing, not examined). —YAGINUMA & SHINKAI, 1989, p. 51. —HU, 1984, p. 298, fig. 309. —GUO, 1985, p. 164, fig. 147. [Synonymized with *C. reichlini* by Song (1987).]

Specimen examined. 1♀, Paolai-wench'uan, 400 m alt., Kaohsiung Hsien, Taiwan, 8–III–1991, H. ONO leg. (NSMT–Ar 3160).

Notes. This species seems to be widely distributed in China. It was also recorded from Japan (YAGINUMA & SHINKAI, 1989). From Taiwan this is the first



Figs. 17–18. *Clubiona deletrix* O. PICKARD-CAMBRIDGE, 1885 (Kaohsiung Hsien, Taiwan).
 —17, Male palp, ventral view; 18, same, retrolateral view. (Scale: 0.1 mm.)

record of this species. Because the present author examined only the Taiwanese material of this species, he used this species name in accordance with the synonymy of ZHANG (1991).

Distribution. Taiwan; China and Japan.

Species-group of *Clubiona trivialis*

Clubiona asrevida ONO, 1992

(Figs. 19–22)

Clubiona asrevida ONO, 1992, p. 124, figs. 5–7 (holotype ♂ and 1 ♂ 1 juv. ♀ paratypes from Mt. Ch'uansing-shan, 1,840 m alt., T'aichung Hsien, Taiwan, 2–III–1991, H. ONO leg., in National Science Museum (Nat. Hist.), Tokyo, examined).

Specimen examined (except for the type series). 1 ♀, Hsinjenkang, 2,380 m alt., SW of Mt. Hohuan-shan, Nant'ou Hsien, Taiwan, 23–X–1989, Y. NISHIKAWA leg. (NSMT–Ar 3161).

Notes. The present author previously described this species on the basis of the male specimens collected in Taiwan during the expedition of 1991. Though he could not include the present female specimen in the type series of the species because it was collected in the separated mountain range from the type locality. It is, however, provisionally treated as the female of *Clubiona asrevida* in the present study and described in the following lines.

Description (based on 1 ♀ from Hsinjenkang). Measurement (in mm). Body length 5.85, prosoma length 3.11, width 2.00; opisthosoma length 3.04, width 1.48; lengths of legs [total length (tarsus + metatarsus + tibia + patella + femur)]: I 4.12 (0.40 + 0.75 + 1.02 + 0.72 + 1.23), II 4.21 (0.43 + 0.78 + 1.03 + 0.67 + 1.30), III 3.69 (0.30 + 0.87 + 0.80 + 0.57 + 1.15), IV 5.35 (0.40 + 1.50 + 1.19 + 0.69 + 1.57).

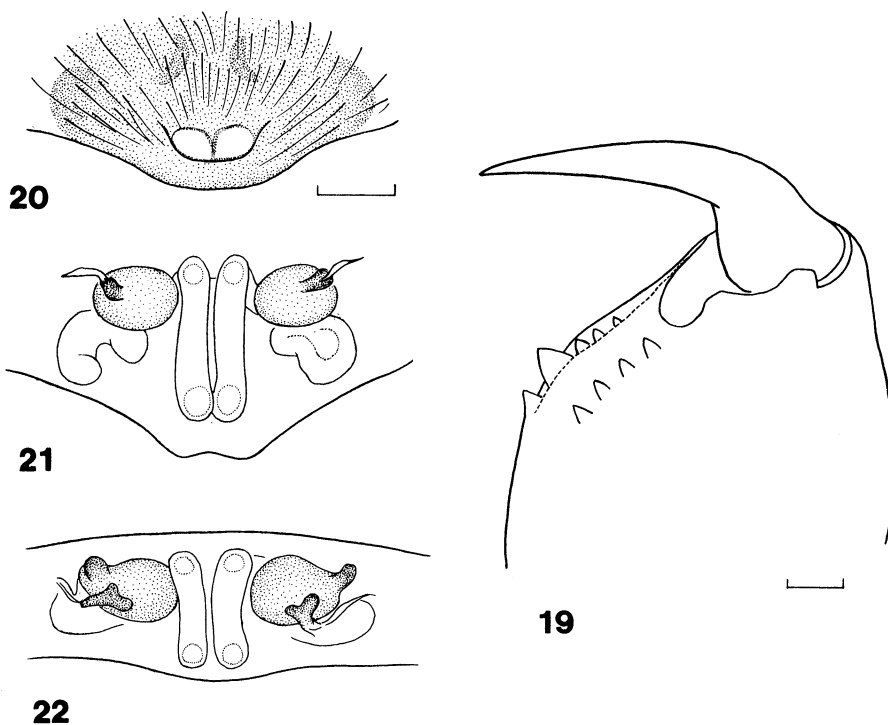
Prosoma. Eyes equal in size except for ALE larger than the others (AME/ALE 0.83), AME–AME/AME–ALE 1.10, PME–PME/PME–PLE 1.53, median ocular area length/width 0.65, anterior width/posterior width 0.65, clypeus/AME–AME 0.36. Chelicera with one large and four small teeth on promargin of fang furrow and four teeth on retromargin. Femora I–IV with 1–0–1–1 dorsal, 0–0–0–1 prolateral, III–IV with 0–0–0–1 retrolateral spines, respectively; tibiae I–II with 2–2–0 ventral spines; metatarsi I–II with 2–0 ventral spines.

Opisthosoma. Female genitalia (Figs. 20–22). Epigynum expanded caudad; intromittent orifices situated near epigastric furrow and close to each other. Internal organ small and compactly set; intromittent canals relatively thick; atrium as large as spermatheca; spermathecae globular with a small glands.

Coloration and markings. Prosoma: Carapace yellowish brown, cephalic part darker, chelicerae reddish brown, maxillae and labium yellowish brown, sternum light yellowish white, legs and palps dark yellow. Opisthosoma: dorsum pinkish, posteriorly darker; venter beige, caudally black, spinnerets yellow.

Distribution. Taiwan.

Remarks. The present author regarded *Clubiona diversa* O. PICKARD-CAMBRIDGE, 1862, was closely related to *C. asrevida* on the basis of the morphology of male palp (ONO, 1992). However, in the structure of female genitalia, *Clubiona asrevida* seems to stand closer to *C. trivialis* C. L. KOCH, 1843, than to *C. diversa*.



Figs. 19–22. *Clubiona asrevida* ONO, 1992 (Mt. Hohuan-shan, Taiwan).—19, Chelicera; 20, epigynum; 21, female genitalia, dorsal view; 22, same, frontal view. (Scales: 0.1 mm.)

Clubiona asrevida also resembles *C. subrostrata* ZHANG et HU, 1991, in female genitalia, but can be distinguished from the latter by the internal organ compactly set and by the intromittent canals thick and curved.

Clubiona insulana ONO, 1989

Clubiona insulana ONO, 1989, p. 162, figs. 21–22 (holotype ♂ from Shirahama, Iriomotejima Island, Southwest Japan, 27–XII–1987, A. TANIKAWA leg., in National Science Museum (Nat. Hist.) Tokyo, examined).

Specimens examined. 1♂, Tayuling to Lishan, 2,540 m alt., N of Mt. Hohuan-shan, Nant'ou Hsien, Taiwan, 14–III–1991, H. ONO leg. (NSMT–Ar 3162); 1♂, Kuanyun-shanchuang, 2,410 m alt., Kuanyuan, NE of Mt. Hohuan-shan, Hualien Hsien, 13–III–1991, H. ONO leg. (NSMT–Ar 3163); 1♂, Mt. Shimen-shan, 3,236 m alt., Mts. Hohuan-shan, Nant'ou Hsien, 22–X–1989, H. ONO leg. (NSMT–Ar 3164).

Notes. This species was described on the basis of 1♂ collected from Iriomotejima Island, SW Japan, where the subtropical climate was dominative. It is interesting that this species was newly collected from the mountain region of Taiwan, where was covered by snow in winter.

Distribution. Taiwan; Japan (Iriomotejima Island, the Ryukyus).

Clubiona yangmingensis HAYASHI et YOSHIDA, 1993

Clubiona yangmingensis HAYASHI et YOSHIDA, 1993, p. 48, figs. 1–7 (holotype ♂ and allotype ♀ from Mt. Yangming-shan, Taipei, Taiwan, 2–VIII–1977, H. YOSHIDA leg., in National Science Museum (Nat. Hist.), Tokyo, examined).

Note. Not included in the present materials.

Distribution. Taiwan.

Species-group of *Clubiona zilla*

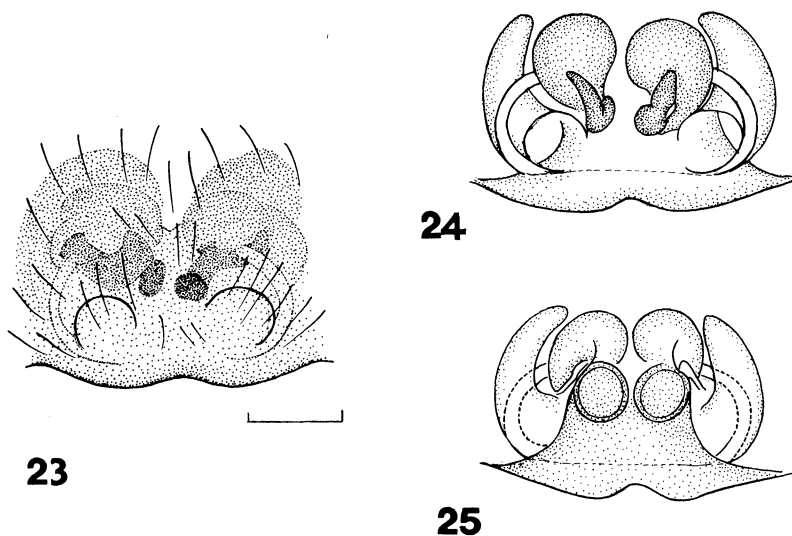
Clubiona tanikawai ONO, 1989

(Figs. 23–25)

Clubiona tanikawai ONO, 1989, p. 163, figs. 23–27 (holotype ♂, allotype ♀ from Ôtomi, Iriomotejima Island, SW Japan, 29–III–1988, A. TANIKAWA leg., many paratypes from the same island, in National Science Museum (Nat. Hist.), Tokyo, examined).

Specimens examined. 1♀, Shenmu, 2,180 m alt., Mt. Hohuan-shan, Nant'ou Hsien, Taiwan, 12–III–1991, H. ONO leg. (NSMT–Ar 3165); 1♀, Ts'uifeng, 2,200 m alt., SW of Mt. Hohuan-shan, Nant'ou Hsien, 23–VII–1977, H. YOSHIDA leg. (NSMT–Ar 3166).

Notes. As in the case of *Clubiona insulana*, this species was newly recorded from the mountain region of Taiwan. It was previously known only from Iriomotejima Island, SW Japan. The female genitalia of the Taiwanese individual are illus-



Figs. 23–25. *Clubiona tanikawai* ONO, 1989 (Mt. Hohuan-shan, Taiwan).—23, Epigynum; 24, female genitalia, ventral view; 25, same, dorsal view. (Scale: 0.1 mm.)

trated in Figs. 23–25. The spermathecae are slightly larger than those of the Japanese individual, however, the difference may stand in a range of variation.

Distribution. Taiwan; Japan (Iriomotejima Island).

Species-group of *Clubiona japonicola*

Clubiona japonicola BÖSENBERG et STRAND, 1906

Clubiona japonicola BÖSENBERG et STRAND, 1906, p. 281, pl. 16, fig. 498 (holotype ♀ and 1♂ paratype from Saga, Japan, W. DÖNITZ leg., in Senckenberg Museum, Frankfurt am Main, examined.) —CHU & OKUMA, 1970, p. 79.

Clubiona japonicola (sic): CHU & OKUMA, 1976, p. 115. (For further literature see catalogues.)

Notes. Not included in the present materials. This spider may be a dominant species in paddy fields of East Asia.

Distribution. Taiwan; Japan, China, Korea, Russia (Siberia), Thailand.

摘 要

台湾から得られたフクログモ属 (フクログモ科) のクモ類の標本を分類学的に研究し、10 種に同定した。そのうちの 5 種、*Clubiona yaginumai* HAYASHI, 1989 (ヤギヌマフクログモ)、*C. kurosawai* ONO, 1986 (クロサワフクログモ)、*C. deletrix* O. PICKARD-CAMBRIDGE, 1885 (マダラフクログモ)、*C. tanikawai* ONO, 1989 (タニカワフクログモ) および *C. insulana* ONO, 1989 (シマフクログモ) を、台湾の動物相に新たに記録することができた。さらに *Clubiona taiwanica*, *C. kuanshanensis*, *C. bonicula* および *C. kayashimai* の 4 新種を記載した。今回の記録を含め現時点での台湾からの既知種すべての学名を掲げた。

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